Mai 1952

LEIPZIGER MESSE Informationen

TECHNISCHER DIENST

Great Success of International Economic Conference

Next Meeting of Committee for Furtherance of World Trade at Leipzig Fair in September 1952

These lines are being written only a few days after the end of the International Economic Conference in Moscow. Close on 500 leading industrialists, economic experts, and business men from 50 countries met to discuss how the difficulties at present existing in international trade, can best be overcome. They found that it was not only possible to agree on a common platform, but proved it in practice by concluding large-scale trade agreements, which augur well for future trade between Western European and overseas countries on the one hand, and the Soviet Union, China, and the Eastern European countries on the other.

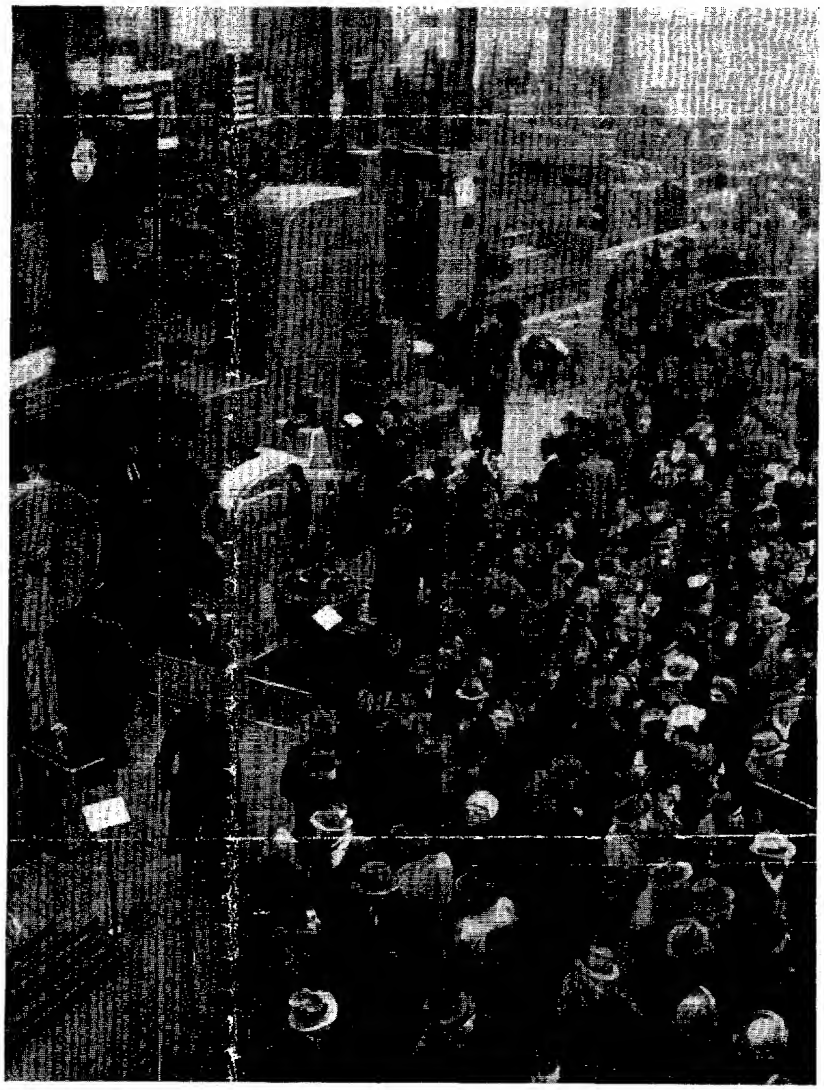
At the end of the conference, a Committee for the Furtherance of World Trade, consisting of 30 members, who come from Britain, the USA, China, and the USSR, as well as many other countries, was set up. This Committee decided at its meeting on April 14, to hold its next meeting at Leipzig during the Autumn Fair in September 1952.

The Leipzig Fair, which will be held as a Technical Fair and Sample Fair for consumer goods from September 7—17, has been an arbiter in east-west trade for centuries past, and Leipzig is today ready, and better able than ever before, to play its middler role in international trade.

The Leipzig Fair is the shop-window for German industry, particularly of the German Democratic Republic, where production is now 36% above the level of 1936. But Leipzig Fair is also to an ever increasing extent being used by the Soviet Union, China, Poland, Czechoslovakia, Hungary, and many other countries, to show what they are producing and what commodities they are prepared to barter on the world market.

Latest reports show that demands for exhibition space by foreign exhibitors are about double those of previous fairs. Czechoslovakia, for instance, has reserved a total area of 48,000 sq. ft. Extensive building projects are at present being carried out on the Technical Fair grounds to make more floor space available, particularly for heavy industry. More details about these projects will be found in the following article.

The response from all parts of Europe, North and South America, the Middle and Far East, shows that Leipzig Fair in September will once again prove that it is possible for countries with different social and economic systems to entertain peaceful trading relations with one another.



New Building Projects for Leipzig Fair

Since the beginning of the year, building activity has increased on the *Leipzig Technical Fair* grounds. Already in the autumn of 1951, work was begun on a new exhibition hall 450 ft. long and 130 ft. wide. When on a cold February day the roof was set up on the first section of the building, the foundaments of the second section were being completed (Fig. 1). The hall consists of two naves, each of which will be equipped with a crane construction with a capacity of 16 tons. This new hall is in the meantime nearing completion and will make over 60,000 sq. ft. of exhibition space available, which will in the first place be put at the disposal of firms producing food-processing and refrigerating machinery and machines for the chemical industry.

At the beginning of 1952, work was started on a new hall, which will house

Fig. 1

the machine-tool industry. The first section will be completed for the September Fair. After final completion in 1953, this hall will, with an exhibition area of 160,000 sq.ft. be, beside the Soviet Hall, the biggest hall on the Technical Fair grounds. Its total length will be over 650 ft., and it will be 250 ft. wide. It will have 3 naves, each equipped with its own crane (Fig 2).

Both these halls now being built are the realisation of projects which the management of *Leipzig Fair* is carrying out within the Five-Year Plan of the German Democratic Republic. Till 1955, a further number of halls will be built.

Great building activity is to be observed on the hall of the Soviet Union, whose architecture is being entirely reconstructed. Special building materials brought from the Soviet Union are being used. When the hall is completed in the summer, it will be the most striking building of the Technical Fair grounds and will without doubt be one of the most beautiful exhibition halls in the world.

A number of smaller projects round off the picture of the building preparations for *Leipzig Fair 1952*, which will, in every respect, be the greatest and most interesting Fair since the war.

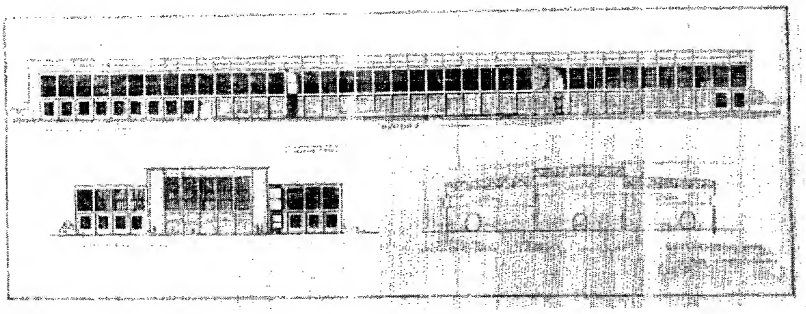
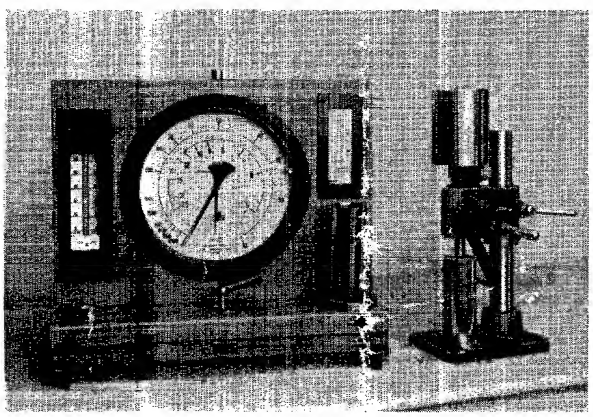


Fig. 2

New Testing Instrument for the Supervision of Moulding and Core Sand in Foundries

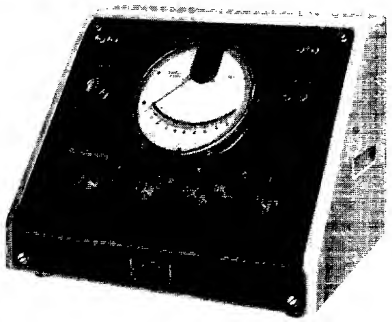
Porous castings are in many cases produced owing to the use of faulty moulding or core sand. Foundry sand which is well permeable to gas, generally eliminates this fault, which impairs the quality of the casting, involves a high rate of waste, thus reducing the production and increasing the cost. The primitive, though frequently employed testing method of blowing tobacco smoke through the moulding sand or dried core compressed in the hand, is quite unreliable and should therefore be repudiated from the standpoint of exact measuring technics. Recognizing this fact as well as the necessity that the foundry sand used for a definite part made of cast iron, cast steel, or cast metal, is currently tested for permeability to gas and contents of humidity, the firm Geräte- und Armaturenwerk Magdeburg vorm. Schäffer und Budenberg, Magdeburg-Buckau, developed the *gas permeability tester* shown here, for the determination of the permeability to gas by means of a sample prepared always under the same conditions either by stamping on a ram, or by cutting out of the stamped form, and tested either in a moist or dried condition. The indicating instrument, built into the front board and equipped with a black face ring, shows values between ∞ and 5 cm./minute, determined by the time required by the air to pass through, and thus representing an unequivocal measure for the permeability to gas of moulding or core sand. The permeability to gas is e.g. for metal castings 15 .. 60, for thin-walled cast iron 15 .. 25, for machine castings 25 .. 40, for greensand steel castings 80 .. 180, for drysand steel castings 150 .. 300 cm./min. Any unskilled labourer will be able to determine these values after a training time of 15 minutes.



These values allow conclusions to be drawn regarding the humidity contents of sand, provided that the composition of the sand is uniform. If e.g. the moulding or core sand are of the same composition, while the values found for the permeability to gas drop, this is a positive indication of too high a degree of humidity contained in the foundry sand used. Hence the dressing of sand is currently examined by the permeability tester.

RFT Triodometer Type Tg 4

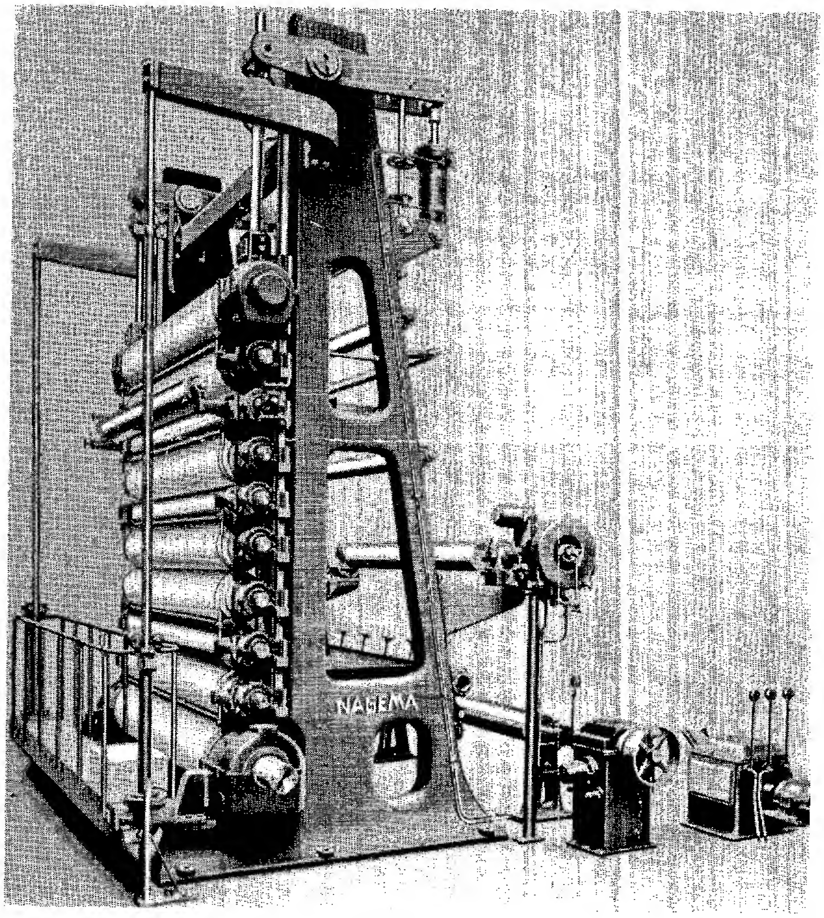
Electric constants are used in the chemical industry for the purposes of qualitative and quantitative analysis. The Triodometer type Tg 4 measures the pH-value of aqueous solutions, working practically without current as continuous tension valve voltmeter. The conductivity is measured with low-frequency alternating tension, and the constant of dielectricity with high-frequency alternating tension.



The alternating tension required for measurements, which is expected to meet particularly high demands regarding the shape of its curve, is produced by a built-in reversible valve generator. In potentiometric titrations, the point of equivalence is indicated by a sudden change of the pointer deflection, in conductometric titrations by a change in the direction or speed of the pointer movement. For the purposes of continual supervision of manufacturing methods, a recording instrument is connected to the bushes marked "Instrument". In order

to prevent the intrusion of corrosive va- casing hermetically sealed ... pours, the apparatus is built into a metal All ducts are secured by packings.

High-Efficiency Special Calenders for the Paper-Making Industry



The calender plays an important part among the paper-making machines used to provide the paper surface with a special effect: gloss, smoothness, embossments, etc. Both the nature of the effect as well as the kind of paper are decisive for the design of the calender, its size, the number and width of rollers, the condition, arrangement, and bearings of rollers, and many other items.

The frame, in which the rollers are arranged one above the other, must be so designed, that vibrations are eliminated even at highest loads and at top speeds of the paper web passing through. Some of the rollers have a spherical body which consists of pressed special material ensuring resilience, while the hard rollers are ingot castings with a great surface hardness (glazing calenders) and may be heated or cooled. Ordinarily the rollers are so arranged that one heating roller is mounted between two elastic rollers.

For quick-running calenders, the design of the bearings is a consideration of decisive importance.

Oleohydraulic pressure is now being preferred at a growing rate. The use of oil as a medium makes the pressure uniform and free from shocks.

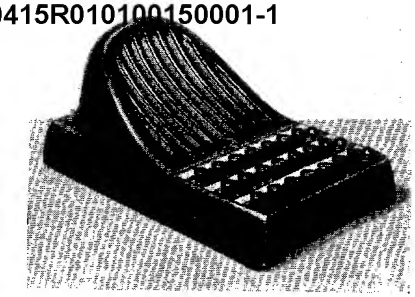
All adjustments and changes in the machine are controlled by a switching plant and are simultaneously indicated, such as the regulation of pressure down to instantaneous complete relief of pressure, the lifting of rollers while the calender is stopping, the actuation of the hydraulically controlled brake on the feed side and on the differential drive of the delivery side. The push-button control board for starting and stopping the calender and the pump, is also arranged on the switch plant. As the latter is mounted within the reach of the operator, the machine can be safely operated and attended in its various positions without loss of time.

Mounted to the paper-unwinding device, there is a water-cooled band brake, allowing the production of a uniform and sensitive braking effect, the energy for which is produced by oil pressure.

The paper web is reeled by means of a differential drive, i. e. it is designed as a differential type. The differential drive, too, is equipped with a water-cooled band brake controlled by oil pressure, while the winding tension can be conveniently read from the manometer. The paper tension can be adjusted finely from kg. to kg. by means of a measuring instrument, so that it can be suited to the character of the paper.

Telephone Conversation of Everybody with Everybody

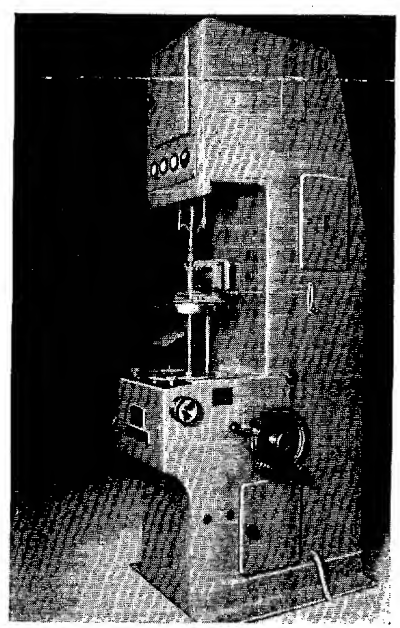
VEB Telektron has developed a telephone station for a conference intercommunication and telephone plant for

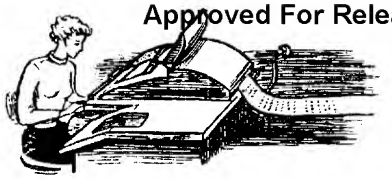


21 participants. The telephone station consists of a plastic casing containing, in addition to the talking equipment, the 21 press buttons arranged in 3 groups, by means of which the station can be connected with every other station. Mounted on the right side of the press buttons, there is a red pilot lamp which, when glowing, indicates that the stations controlled by the adjacent row of press buttons, are busy. The button of the desired participant has to be depressed while talking, the connection is established instantaneously. The name or designation of the participant can be noted on a ledge mounted above the press buttons.

Precision Honing Machines HOS 350 sup.

The precision honing machine HOS 350 sup. (super-finish), constructed by WMW Honmaschinenwerk Naumburg VEB, warrants maximum micro- and macro-geometric precision and shortest machining time for work of 6 to 55 mm. diameter and up to 300 mm. long. The construction of the machine is based upon the practical and scientific experience hitherto made in the construction and operation of honing machines. The machine is suitable for finishing bores of 6—55 mm. diameter, assuring a super-finished surface which complies with the greatest demands. If equipped with special honing tools, the machine can also be used for external honing work.





warrants for uniform results as to quality and machining time, and facilitates the work of the operator in the production of larger series. A time relay is provided to adjust the honing time according to an empiric value. On expiration of the preset time, the table carrying the work its end position. The next working process is then pre-indexed, and the machine itself is disconnected. A pilot lamp indicates the expiration of time in advance, warning the operator that the feed wheel should be turned back in order to release the honing reamer slightly.

Latest Technical Developments

Machines for the Leipzig Fair Being Developed. In the machine-building factories of the German Democratic Republic, designers, engineers, and workers are intensively engaged in the development of new machine types. The new samples will be exhibited for the first time at the Leipzig Fair 1952, to be held as a large technical fair and sample fair from September 7th to 17th. Series production will begin in 1953. The Niles-Werke, Chemnitz, e. g. are getting out new designs of sliding and screw-cutting lathes, and the required special machines for the production are being developed at the same time. The Fritz Heckert Werke at Chemnitz, which are leading in the construction of milling-machines in Germany, will also exhibit some new designs of heavy construction at the Leipzig Fair. The Fair models are also being manufactured.

Motor-Car Bodies Made of Plastics. A motor-car body of plastics, which reduces considerably the weight of the vehicle, has been developed by the engineers of the people-owned Hartpappenwerk Polenz in the district of Pirna, and of the IFA Association of People-Owned Vehicle Factories. This innovation, which is pioneering for the whole automobile industry, answers all requirements of modern engineering in the construction of vehicles. Attempts in the United States and in England to make motor-car bodies out of plastics, were not productive of satisfactory succes. The first trial car, whose entire outer walls, including the motor hood, mudguards, and luggage carrier, are made of plastics, has been successfully running for more than one month. The car was kept going for 16 hours daily on the average, under severest conditions. The first 2,000 cars of the DKW F 9 type to be constructed under the National Economic Plan, 1952, will be equipped with the new plastic body.

Pilot Boats Launched. Two pilot boats have been launched by the Genthin shipyard. A third boat will be launched shortly. Furthermore, the construction of a workshop ship has been scheduled for this year, which will be used for repairing ships on sea. The Genthin shipyard took up the construction of seagoing ships only in the last year. The first two pilot boats as well as special floating implements for raising sunk ships were commissioned for service in 1951. The staff of the shipyard has been increased by more than four times since 1949. In the course of the Five-Year Plan, the shipyard will be provided with a large ship-building shop.

Glove-Making Machines for Export. Considerable supplies for export are being made by the private company of Lorentz & Poltermann at Altenburg, who are specialized in the manufacture of tools and machines for the glove-making industry. In the previous year alone, about 25% of the whole production were supplied to Poland and Finland. At the

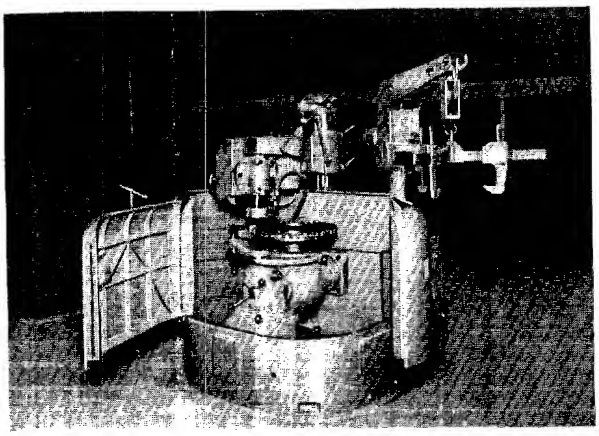
Cutter-Head Grinding Machine SM 700 for Cutter-Heads of 110-700 mm. Diameter

The cutter-head is enjoying growing importance for machining plane surfaces. A carefully ground and true-running cutter-head can be used to produce extraordinarily fine surfaces. Furthermore, when doing roughing work, the cutting-rate is considerably increased. The cutter-head grinding machine, therefore, is an indispensable tool. The machine is so designed, that perfect grinding of the cutter-heads is assured. The machine can be used for grinding right-hand and left-hand cutting heads.

The tool holder is formed spherically, supported on two sides, and clamped in position by a star handle. A graduation facilitates the adjustment of the cutter angles to be ground. The carrying spindle is arranged vertically and supported in accurately adjustable cone-roller bearings.

The grinding spindle is mounted to a revolving part on the bearing and performs a reciprocatory movement over the cutter to be ground. After one complete stroke, the cutter-head is automatically moved to place the next cutter into grinding position. The grinding spindle is constructed for left-hand and right-hand operation and can be quickly exchanged if necessary. The grinding wheel is fastened in a support and can be balanced by weighting segments. The grinding spindle is driven by a three-phase motor with five-stepped pulley and V-belt. The belt can be shifted by hand by loosening the three-phase motor mounted on a slide. Five speeds of 1225-1850-2800-3200-4800 r.p.m. can be used, allowing cutting-speeds from 6—25 m./sec.

The grinding measurements are set automatically and electro-mechanically. The revolving part with the grinding spindle is supported on a slide running in a prism of the outer bearing, and can be lifted or lowered by means of a hand wheel to adjust the position of the grinding wheel roughly. A scale is provided to facilitate the adjustment of the grinding depth of 0.1—4 mm., and the regulating button serves for adjustments between 0.05—0.2 mm. The automatically working feed becomes smaller towards the end of the grinding operation, whereby the surface quality of the cutting edge is extraordinarily high. By depressing a particularly marked feed lever, an additional grinding depth of 0.005 mm. can be obtained.



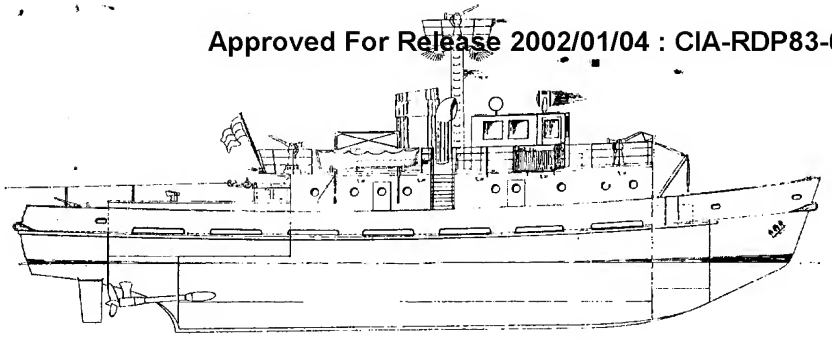
Manufacturers:

WMW
Maschinenfabrik
Berlin-Treptow
VEB,
Berlin-Treptow.

Emergency Motor Boats for Seaports

VVW Rostock is in a position to submit two mature designs for emergency motor boats, which will be constructed shortly. The boats, which will be stationed at seaports, are intended to be used as fire-boats, ice-breakers, and salvage boats. One of the vessels is provided with a double-screw drive, the other one has a Voith-Schneider propeller. The propeller boat, which is 30 m. long and 7.5 m. wide, reaches a speed of 25 km./h. at an engine output of 980 HP. Four sets of centrifugal pumps connected parallel accomplish an output of 53.2 m.³/min. at a pumping height of 40 m. The Voith-Schneider vessel, which is 27 m. long and 7.0 m. wide, reaches a speed of 24 km./h. at an engine output of 800 HP, while its three parallel sets of centrifugal pumps deliver 30 m.³/min. at a delivery height of 55 m.

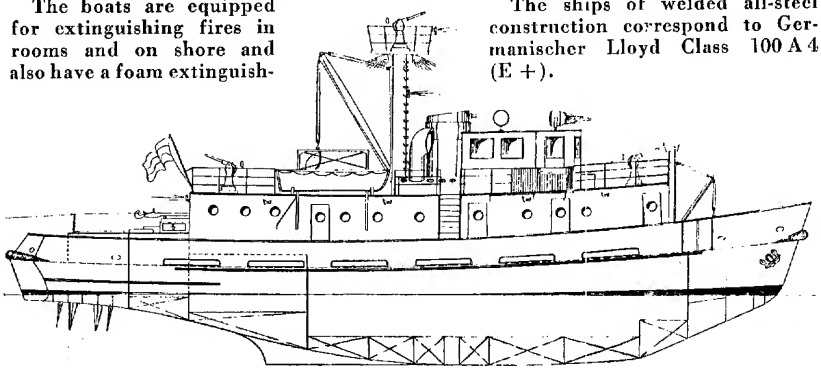
The vessels are provided with Diesel electric drive, allowing the energy generated to be used either for propulsion or pumping, as required. In the double-screw ship, three DC generators are driven by three Diesel engines of 1×420 and 2×280 HP. The current thereby generated and kept constant is used for the drive of the 8 pumps of 80 kW. each, or for the drive of the two propeller motors of 280 kW. each. In the Voith-Schneider vessel, four Diesel engines of 200 HP generate three-phase current for three sets of pumps or for the two propeller motors of 500 kW. total. The Voith-Schneider propeller distinguishes itself by its unsurpassed manœuvrability,



which makes it possible to turn or to keep the boat on the spot against wind, water currents, and the reaction pressure of the fire engines without it being necessary to change the speed or revolving direction of the driving motors. For this reason, it was possible also to use a three-phase current plant.

The boats are equipped for extinguishing fires in rooms and on shore and also have a foam extinguishing plant for the control of burning liquids and other dangerous incendiaries. If used as ice-breakers, the bodies of the vessels are provided with an inclined ice-breaker stem and with round ribs. The stern of the two ships extends below the water level, so that drifting ice can not easily get into the propeller.

The ships of welded all-steel construction correspond to Germanischer Lloyd Class 100 A 4 (E +).



present time, now large foreign contracts are being prepared, which will take up a whole year's production of the works.

Interception of Flying Cinders. The engineer Mr. Paul Ostermann was awarded a premium of 5,000 DM by the General Managements of the German Railways, in consideration of a new device developed by him for the interception of incandescent flying cinders. In the smoke-box of the locomotive, the spark-arrester is replaced by a sheet-metal case, which guides the sparks from the outlet to the chimney. Parts which are nearly burnt and which cannot be deflected on account of their smallness, are extinguished and deposited by a screen of water. The installation costs DM 150 per engine.

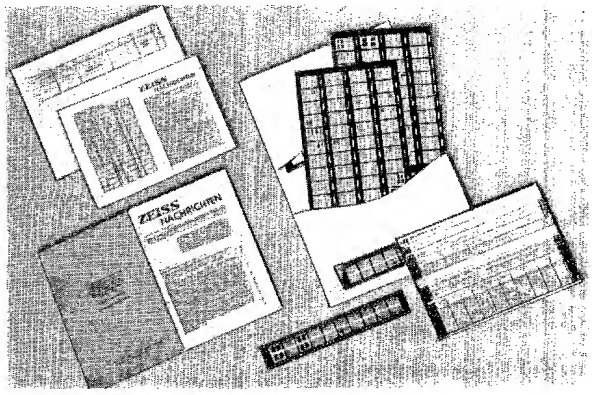
Articles much in Demand for Export. The Polygraph-Druckautomatenwerk, Leipzig O 27, is producing printing-presses for the graphic trade. In the previous year, 70% of the machines produced have been exported. A fine proof for the high-quality work done by the staff of the enterprise. This success was accomplished above all by the new attitude of the workmen to their work.

Also for the year 1952, considerable orders have been received from Australia, Norway, Mexico, Venezuela, Finland, and Hungary. *Mercedes I* and *II* as well as *Mercedes 0*, which have been improved or newly developed since 1945, are greatly demanded for export.

Dokumator System for the Production and Evaluation of Micro-Books

On account of the rapid growth of world literature, documents of all kinds (books, periodicals, sketches, pictures) have to be stored on smallest space, but still be easily accessible. These tasks are fulfilled by the Dokumator System of the Carl-Zeiss-Werke VEB, Jena. It consists of the Dokumator Camera, the Micro-Books, and the Dokumator Reading-Set.

The *Zeiss Dokumator Camera* makes reproductions on standard 35 mm. film. Almost all its parts are made of metal. The reproduction camera is attached to a post and can be moved and arrested. Its weight is balanced by a counter-weight. The camera is a rigid minicam with a cartridge for 50 metres of standard film. This amount of film suffices for about 4,800 book pages or 8 volumes with 600 pages each. After every ten frames, an obligatory blind exposure is made. In this way, the exposed, developed, and fixed film can be easily cut into handy strips of ten frames each. The camera is equipped with the special 35 mm. Dokumar lens. Each exposure is marked with a number which is photographed together with the object. The camera is provided with a voltage regulator guaranteeing that the four illumination lamps burn with a constant brightness. The camera is set for the exposure according to two scales, one on the guide post and the other one on the objective. On these scales, you will also find the German Standard Sizes from DIN A 6 up to DIN B 3. Shortly trained operating personnel will easily reach an average of 300 to 400 exposures per hour with ordinary objects.



Measurements of the camera: length 1,150 mm., width 1,550 mm., height 1,870 mm. Weight about 285 kg.

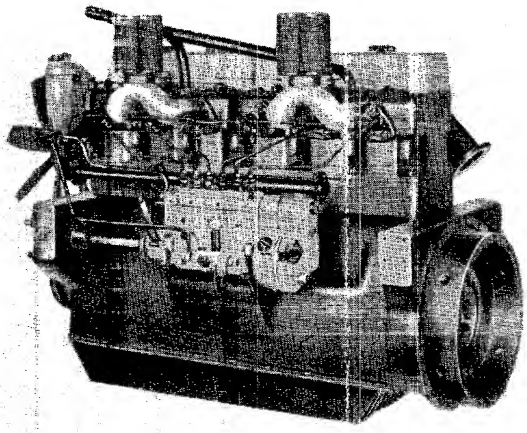
The film strips of ten exposures each are stored and arranged in *Dokumator Micro-Books.* These books consist of a cover with folio-cards inside. Each of the folio-cards contains 5, 10, or 15 cards as desired, in which the ten-frame strips are stored individually. Contact prints of four ten-frame strips each as well as an index are further features adding to the handiness of the book.

The Dokumator Reading-Set contains a well prepared white surface, on which the pictures of the ten-frame strip are projected individually one after the other. In order to ensure contrasty projecting pictures also in bright rooms, the Reading-Set is provided with a hinged light-hood. Script and pictures can be projected to a white screen by means of a mirror and can thus be observed by a larger number of people. The Reading-Set is further provided with a dia-projecting device for dias of 5×5 cm. Large copies can also be prepared with the instrument.

Measurements of the Reading-Set: length 520 mm., width 490 mm., height 690 mm. Weight about 21.5 kg.

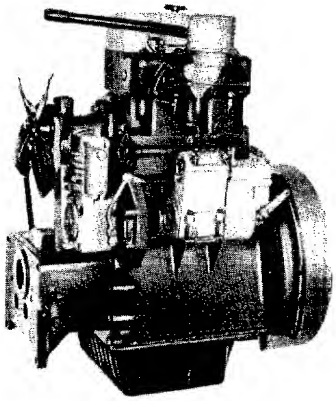
The Diesel Building-Box Series of the IFA Works

The most important stage of development in the field of Diesel engines in the German Democratic Republic was reached with the Diesel building-box series, produced by the IFA, association of people-owned vehicle-works.



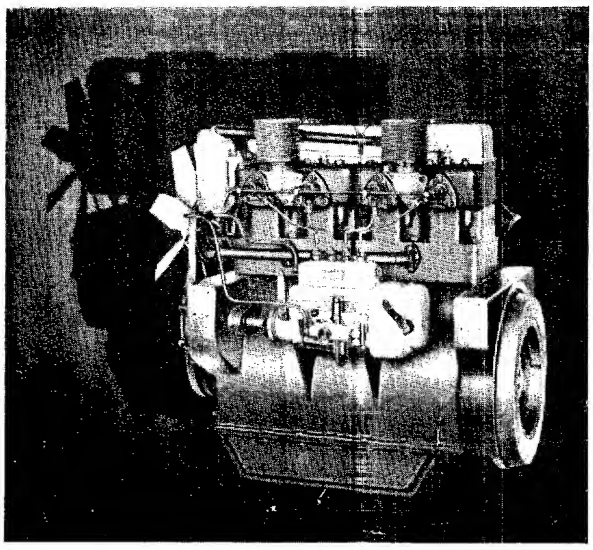
The term building-box series covers a number of Diesel engines of different output, but of fully equal basic construction: engines that have been designed as a drive for road, farming, waterway, and rail vehicles, as well as for stationary service with building-machines, and as a drive for compressors and electro-generators.

With the development of this building-box series, the IFA staff set itself the task of achieving outstanding, far-reaching standardization, together with a substantial simplification and reduction of cost, in the manufacture and maintenance of Diesel spare parts.



A great number of parts can be used for the two-cylinder, as well as for the three, four, and six-cylinder building-box engines, such as: connecting rods, pistons, cylinder blocks, cylinder liners, cylinder heads, cylinder-head caps, valves, valve control, and drive gears.

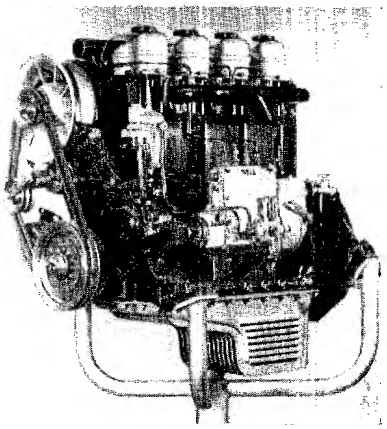
The new construction was based on a four-stroke, water-cooled, eddy-chamber Diesel engine with a cylinder capacity of abt. 1.5 litres. The technical data are as follows: cylinder bore 115 mm., cylinder stroke 145 mm., rate of compression 17.5 : 1, attainable mean pressure abt. 7.5 kg., most economic fuel consumption abt. 190 gm./HP/h., cylinder output 15 HP at 1,500 r.p.m., and 20 HP at 2,000 r.p.m. The detachable cylinder block, fitted with wet liners, holds the cylinders, two (or three) being cast integrally. This applies to the cylinder head in the same way. The camshaft is driven by a helical gearing, lubrication of the engine being effected by a force circulation system with cog-wheel pump of single or twin-type. The valves are suspended in the cylinder head and are controlled over tappets, push-rods, and tilting levers. Fuel is supplied by an IFA standard injection pump under 100 ato pressure through a pivot nozzle. The pump may be delivered with a regulator, if desired.



The Diesel building-box series covers the following types: EM 2-15, two cylinder of 3,012 c.c. capacity, output 30 HP at 1,500 r.p.m., and 40 HP at 2,000 r.p.m.; EM 3-15, three cylinder of 4,518 c.c. capacity, output 45 HP at 1,500 r.p.m., and 60 HP at 2,000 r.p.m.; EM 4-15, four cylinder of 6,024 c.c. capacity, output 60 HP at 1,500 r.p.m., and 80 HP at 2,000 r.p.m., and as outstanding type EM 6-15, six cylinder of 9,036 c.c. capacity, output 90 HP at 1,500 r.p.m., and 120 HP at 2,000 r.p.m. While the two and three-cylinder engines are chiefly confined to stationary use, the four-zylinder EM 4-15 is the "heart" of the well known IFA Horch "H 3 A" lorry, many thousands of which have excellently stood the severest tests. The EM 6-15 is the driving engine for the new six-tons IFA Horch lorry type "H 6".

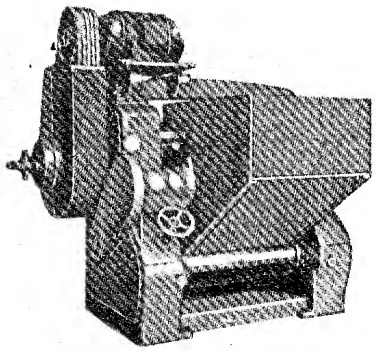
The Air-Cooled "Granit 32" IFA Diesel Engine

This new type of Diesel engine, which is produced by IFA Phänomen-Werk, Zittau in Saxony, represents quite a specialty. The Phänomen-Werke, which enjoy world-wide reputation, are known to have been the first sponsors of air-cooling for lorry engines in Germany. Their great success was the "Granit 27", a four-stroke fuel engine with four cylinders individually arranged in series, with a stroke volume of 2678 c. c., and a power output of 23 HP at a speed of 2800 r.p.m., which has been sold at the rate of tens of thousands with the greatest success. The air-cooling system with blowers, with which this engine was equipped, has given

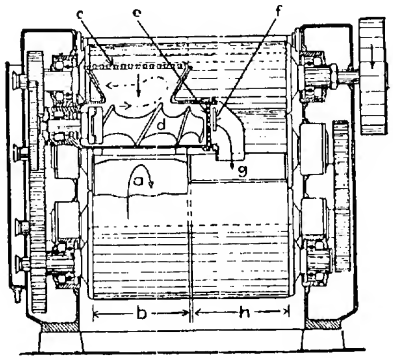


so excellent results, that the engineers of the Zittau IFA Works have decided to adopt this system also for the new, more powerful, and more economic Diesel engine. Thus, the "Granit 32" IFA Phänomen today is a Diesel engine which is a further development of a petrol engine. The four cylinders of the Diesel engine are also arranged individually in series. The cooling air is supplied to the engine by a double blower. The cylinder bore amounts to 90 mm., the stroke is 125 mm. The stroke volume of the "Granit 32" now is 3181 c. c., while its power output amounts to 25 HP at a rate of compression of 18 : 1 and a speed of 1500 r.p.m. Its essential advantage over the petrol engine consists in the fact that it is far less sensitive and, therefore, its life should be much longer. In the first place, the "Granit 32" serves as a driving motor for the robust 1.5—2 to IFA Phänomen high-speed lorries with flat top and box body, as well as for the world-renowned air-cooled Phänomen ambulance cars. In addition, it attracts more and more attention as a stationary motor and drive for the most diverse machines in industry and agriculture.

Automatic High-Efficiency Soap Mill.



The refining mill is one of the machines required in the manufacture of soap. It crushes, mixes, and kneads the soap to form fine soap or toilet soap. The soap particles delivered by the machine need only be passed through the string press and are then formed into loaves. A refining press with multiple track and built-in mixing and kneading worm is produced by VVB Nagema, Dresden-A. 36. This refining mill is constructed with three or four rollers. The working process within this machine is as follows: The soap flakes which are well premixed in a mixing machine, are fed into a feed box divided into two compartments. The flakes fall into the compartment below the worm. They are then ground only by one half of the roller. The layer of soap is removed from the top roller by a scraper and is transported to the worm, which kneads and mixes it, and presses it through a plate with fine perforations. By this process, soap noodles are formed which shortly after emerging from the perforations, are cut into small pieces by a rotary knife. These pieces drop through a chute into the other compartment of the feed box, whence they are conveyed to the other side of the rollers for further treatment. The soap, which has thus been ground, mixed, and kneaded twice, is stripped from the top roller by means of a scraper and processed further in the string press. Further remarkable features of the refining mill are: roller-cooling system, pendulum-type roller-bearings, gear wheels with milled helical teeth, lubrication by oil bath and oil circulation, etc. A special type of refining mill is provided with a soap-flake cutting equipment. — *Technical data:* Diameter of rollers 322 mm., total length of rollers 900 mm., working length of rollers 840 mm., measurements of machine, according to type: 2000 mm. long, 2400 mm. wide, 2300 mm. high; or 1800 mm. long, 2400 mm wide, 2000 mm. high; net weight 4250 kg. or 3300 kg.; power required 30—35 HP, or 25—30 HP, respectively.



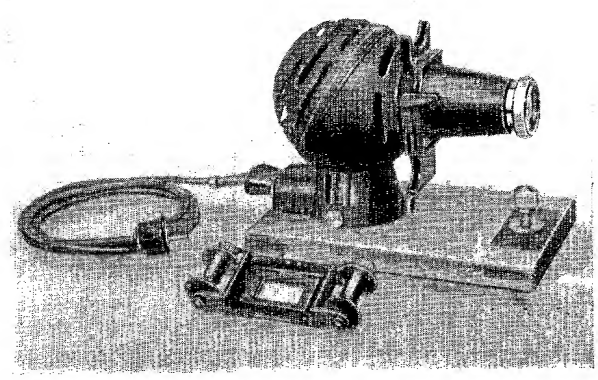
Refining mill (diagrammatic sketch)

a) Compartment receiving the soap flakes,
b) One half of rollers,
c) Scraper,
d) Worm,
e) Plate with fine perforations,
f) Rotary knife,
g) Chute,
h) Other half of roller.

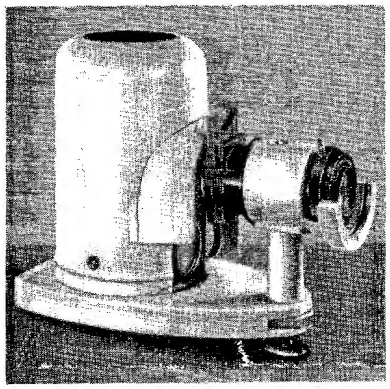
Automatic high-efficiency soap mill.
Manufakturers: Nagema VVB, Dresden-A. 36

Latest Designs in Still-Projectors

The projection of stills will for all times exist beside the projection of movies. Especially black-and-white as well as coloured miniature frames can be projected with simple and conveniently priced models. The midget among still-projectors is the *Miniature Projector 100 W*, manufactured by the Carl-Zeiss-Werke VEB, Jena. It serves for the projection of 5×5 cm. transparencies as well as 24×36 mm., 24×24 mm., and 18×24 mm. positive strips. Its light source, a 220 V/100 W lamp or a 110 V/100 W lamp, may be connected with the mains directly and without resistance. The projector is suitable for home and school use. Even with coloured transparencies and projecting distances up to 8 metres, sufficiently bright pictures with an over-all clarity are achieved. It is equipped with a 100 mm. f 3.5 Triplet lens. — For projecting-distances of more than 8 metres, the Miniature Projector 250/375 W of the same manufacturers is suited best. With this projector, the same frame sizes may be used as with the one described above. For illumination either a photo-flood lamp 220 V/250 W directly connected with the mains, or a photo-flood lamp 75 V/375 W with a resistance connected in series, is used. This model is fitted either with a 100 mm. f 2.8 Triplet lens or with a 165 mm. f 2.2 Kipronar lens. Furthermore, this projector is suitable for stereoscopic projection, if there is applied a system of prisms to be attached to the front side of the objective. In this case, however, the projected picture has to be watched through special spectacles.



For the direct projection of pictures and written text (without transparencies), an epidiascope is used. An especially recommendable apparatus of this kind is the *Bulb Epidiascope*, manufactured by the Carl-Zeiss-Werke VEB, Jena. Illumination is provided by two lamps of 110 volt and 1000 watt each in connection with big aspherical illumination mirrors. Using 220 volt mains, it is necessary to connect a resistance in series, since the lamps are switched individually. The heat protection is brought about by glass filters. The table surface of the apparatus measures 44×58 cm. With a hand wheel coupled to a spindle drive, it is lifted towards the 20×20 cm. projection diaphragm, whereafter it is moved back into its original position. Furthermore, a dia-set for the sizes 8.5×8.5 cm., 8.5×10 cm., and 9×12 cm. is directly connected with this epidiascope. This dia-set has its own illumination. For transparencies 5×5 cm. as well as for positive strips on 35 mm. film, an additional adapter for miniature frames can be used. During projection it is possible to change from one kind of projection to the other. Measurements of the epidiascope: surface of base 52×90 cm., height (without mirror mount) 130 cm.

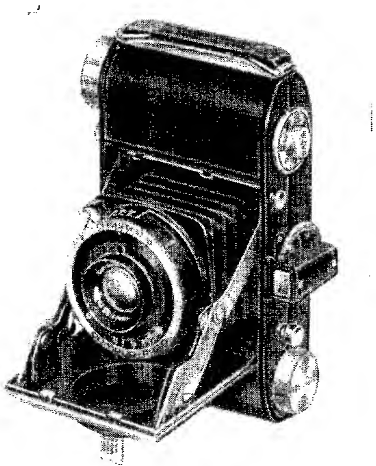


Another still-projector is the "*Belsazar*", manufactured by the Carl-Zeiss-Werke VEB, Jena. It is an apparatus for the projection of script. It is one of the features of this model that one can project script even while writing it. Besides, it can be rebuilt into an X-ray projector. As a script projector, the "Belsazar" replaces the black-board. The lecturer writes on a cellophane tape, and the writing appears on the projecting screen as he is taking it down. Instead of wiping the black-board, as he had to hitherto, the lecturer simply moves the cellophane tape by means of a control button. However, it is also possible to take down the text on the tape already before the lecture.

Furthermore, transparencies as well as some chemical and physical experiments can be projected with the "Belsazar". Instead of cellophane tape, ground glass can be employed as well. A 500 watt lamp for 110 or 220 volt serves as light source.

Measurements: height of writing surface over bottom of apparatus 340 mm., total height to upper mirror edge 890 mm., length of casing 595 mm., size of table surface 560×438 mm.

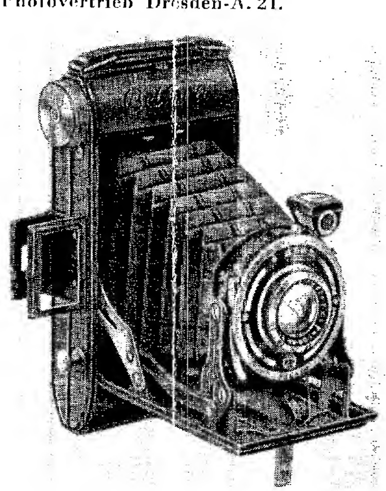
"Belca" and "Belfoca"



"Belca" and "Belfoca" are two cameras with an image area of 24×36 mm., or 6×9 cm., respectively. The "Belca" miniature camera is of the drop-bed, self-erecting front type. On pressing the bed lock button, it opens, and a robust strut mechanism puts the objective in position ready for action. The camera is either equipped with a 5 cm. f 3.5 Zeiss-Tessar lens in Rapid Compur shutter with speeds up to 1/500 sec., or with a 5 cm. f 2.9 Meritar lens in Cludor shutter with speeds up to 1/200 sec. The film flattening is well provided for. An automatic winding stop prevents the film to be transported by more than one frame at a time. A further feature is the exposure-counting dial. The "Belca" uses standard 35 mm. film. After having exposed the film, it is rewound into a cartridge and may be removed from the camera in daylight. The eye-level optical tube-sight finder is fitted with a cam disc. By means of this disc, the finder aim is altered in close-up work, thus ensuring elimination of parallax. For ascertaining the zone of focus, a depht-of-focus table is attached to the outer surface of the camera back. An ever-ready carrying-case warrants quick manipulation of the camera. Measurements of the camera: 12.7×8.4×4.4 cm. Weight approximately 13 ounces.

The "Belfoca" camera, too, is quickly ready for action. Even without enlargement, its negative size of 6×9 cm. is very effective. Of all-metall construction, the body is covered with leatherette. In spite of this, the camera weighs only about 18¾ ounces. A brilliant and a wire-finder are built onto the camera. Not in action, the "Belfoca" is protected by a leather case with neck strap, thus eliminating the danger of being damaged. Its lens is as fast as f 4.5. and its shutter provides for long and short exposure times up to 1/100 sec. Measurements: 16.1×8.5×4.1 cm. —

Both cameras are supplied by the Photovertrieb Dresden-A. 21.



Electrical Wood-Working Tools

Electrical wood-working tools are appreciated both by large and small firms, because they are practical and can be easily approached to bulky work. Furthermore, these machines can be used in the workshop and on mounting-sites. Finally, small enterprises also appreciate these electric tools as stationary machines. A special firm manufacturing electric wood-working tools is Maschinenfabrik Jonsdorf VEB, Kurort Jonsdorf, Kr. Zittau. This firm produces a hand planing-machine, a hand band-grinding machine, and a hand disc-grinding machine.

The *small hand planing and smoothing machine*, model HM 51, is particularly suitable for carpenters', shipbuilding, and mining, as well as general wood-working purposes. The machine is driven by an external rotor motor built into the cutter shaft. Its power output amounts to 1 kw. The speed of the cutter shaft is 280 r.p.m. The planing width amounts to 260 mm., the largest cutting depth, which can be adjusted accurately to 1/10 of a mm. by turning a handle, is 3 mm. The complete machine weighs only 25 kg. net.

The *band grinding-machine*, model BS 51, is suitable for grinding and honing all kinds of woods, which can be immediately stained or polished. The power output of the motor amounts to 0.7 kw., its speed is 1450 r.p.m. The measurements of the grinding band are 860×95 mm. The grinding surface amounts to 100×140 mm. The grinding band can be exchanged by a few manipulations. The tension and true running of the grinding band can be easily regulated, so that its wear is low. The machine weighs 17 kg.

The *hand disc-grinding machine*, model TS 51, is a perfect hand grinding-machine for all kinds of wood and venecred surfaces, for dry and wet operation. The wood ground on it can be painted, stained, and polished at once. The machine can also be used as a bur-milling machine. It is provided with a firm machine base, hence no brush crown. This permits also small surfaces to be ground plane. The

grinding pressure can be accurately adjusted. A remarkable feature is its elliptical grinding surface, whereby the consumption of glass paper is particularly low. The output of the built-in motor amounts to 0.88 kw. The speed of the grinding disc is 2780 r.p.m. The largest diameter of the grinding disc is 185 mm. The machine weighs 16 kg. net.

All machines mentioned above are constructed in accordance with VDE standards and can be connected to 380 and 220 V three-phase current. Motors, switches, and ball-bearings are encased dust-proof.

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